UNITED STATES PATENT AND TRADEMARK OFFICE

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ART UNIT	PAPER NUMBER
2612	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 October 2008*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 11-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 11-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 September 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   The following is a non-final office action in response to the RCE filed 10/23/08.

Amendments received on 10/23/08 have been entered. Claims 1-9 and 11-20 are

pending.

Drawings

2.   The drawings are objected to because conventional features illustrated in the

drawing as rectangular boxes need to be labeled for understanding in this application.

See 37 CFR 1.83(a). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are

required in reply to the Office action to avoid abandonment of the application. Any

amended replacement drawing sheet should include all of the figures appearing on the

immediate prior version of the sheet, even if only one figure is being amended. The

figure or figure number of an amended drawing should not be labeled as "amended." If

a drawing figure is to be canceled, the appropriate figure must be removed from the

replacement sheet, and where necessary, the remaining figures must be renumbered

and appropriate changes made to the brief description of the several views of the

drawings for consistency. Additional replacement sheets may be necessary to show the

renumbering of the remaining figures. Each drawing sheet submitted after the filing date

of an application must be labeled in the top margin as either "Replacement Sheet" or

"New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the

examiner, the applicant will be notified and informed of any required corrective action in

the next Office action. The objection to the drawings will not be held in abeyance.

PCT rule 11.11 states "... in the case of electrical circuits or block schematic or flow

sheet diagrams, a few short catchwords indispensable for understanding" are required.

Labels are required on the boxes since they make the drawings and the claim language

easier to, read and understand the applicant's invention.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and
> of the manner and process of making and using it, in such full, clear,
> concise, and exact terms as to enable any person skilled in the art to
> which it pertains, or with which it is most nearly connected, to make and
> use the same and shall set forth the best mode contemplated by the inventor
> of carrying out his invention.

3.   Claims 1, 5, 9 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing

to comply with the written description requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed,

had possession of the claimed invention.

As of claims 1, 5, 9 and 14, the newly added limitation "the first signal-processing

means being configured to <u>code signal using **only** Miller code</u> and decode signals <u>using

only Manchester code</u> for contact-less station-transponder communication" is not

disclosed in the specification. The applicant did not cite and the Examiner was not able

to find support for the newly added limitation in the specification.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
>
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
>
> the prior art are such that the subject matter as a whole would have been obvious at the time the
>
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
>
> Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over by

Strong et al. (US 2003/0007473) in view of Bonneau et al. (6,577,229).

6.   Referring to claims 1, 5, 9, 14 and 19, Strong teaches a system, as shown in Fig.

2, comprising a local positioning system (LPS), which includes a plurality of

interrogators 6 (i.e., communication stations) coupled to a plurality of antennas 5 that

communicate with each other and with tags 2 (i.e., transponders) (see Sections [0045]-

[0046], and [0054]-[0055]). Per Strong, interrogator 6 communicates with tags 2 using

spread-spectrum (i.e., an interrogator-tag protocol) (see Section [0096]); thus

interrogator 6 must include a first protocol-executing means. Strong further teaches that

interrogators 6 are directly connected to an Ethernet local area network (LAN) and

communicate with each other over the LAN using the Ethernet protocol (i.e., an

interrogator-interrogator protocol) (see Sections [0047] and [0054]-[0055]); thus

interrogator 6 must also include a second protocol-executing means. Though not

expressly taught, Strong's interrogator 6 must have an integrated circuit and comprising

at least (1) a radio frequency (RF) transmitter and receiver (or an RF transceiver) and a

microprocessor that form a first protocol-executing means in order to communicate with

tags 2 via spread-spectrum and (2) an Ethernet interface (i.e., a second protocol-

executing means) in order to communicate with other interrogators 6 via the LAN.

Strong further discloses that the interrogator communicate with other interrogators and

tag wirelessly (via interrogator A communicating wirelessly with interrogator B and a tag;

see fig. 7)

Even though The Examiner believes that Strong teaches that a reader

communication unit is able to communicate with a tag unit and further communicate with

another reader unit (via 802.11b access point 3 communicating with tag 2 and another

802.11b mobile device; see fig. 2) using a processor MAC and Strong further discloses

that the elements of the reader communication unit 3 can be duplicated via making a

separate receiving unit for tag protocol (see paragraph [0141]). Even though the

description is not fully explained but one of ordinary skill in the art would be able to

realize that Strong does include first signal processing means and second signal

processing means.

In order to further support the Examiners point of view, Bonneau discloses a

communication station (via smart card communication device (SCCD) 104); see fig. 2;

also see col. 67, lines 50-67) comprising a RF circuit 214, DSP 210 and DSP EEPROM

30. Bonneau discloses that RF circuit 214 and DSP 210 perform modulation and

demodulation using the International Organization for Standardization (ISO) Type A

smart card communication protocol (i.e., at least one transmission parameter) or the

ISO Type B smart card communication protocol (i.e., at least one other transmission

parameter) to enable communication between SCCD 104 and a Type A or B smart card 106 (see Col. 2, lines 17-37; Col. 7, lines 1-13; Col. 9, lines 39-45; Col. 10, lines 14-23 and 25-38; Col. 12, lines 51-67; Col. 13, lines 1-22, 36-38, and 46-67; and Col. 14, lines 1-57); thus Bonneau's RF circuit 214 and DSP 210 form (a) a first signal-processing means that processes signals and enables signals to be processed when SCCS 104 communicates with a device having one type of protocol (b) a second signal-processing means that processes other signals and enables other signals to be processed using at least one other transmission parameter when SCCS 104 communicates with a other device having a different communication protocol. Bonneau discloses a transmission means connected to the first and second signal processing means to transmit and receive signals from different devices having different protocols (via antenna assembly 216; see fig. 2). Bonneau teaches that RF circuit 214 and DSP 210's first encoding means process signals according to a 100% Modified Miller modulation scheme when transmitting signals to the Type A smart card (see col. 12, lines 53-56), which uses a Miller coding system and the first decoding means process signal according to an ASK-Manchester modulation scheme, which uses a Manchester coding system (see col. 2, lines 30-33; col. 12, lines 51-67; col. 13, lines 1-5 and 46-47; and col. 14, lines 1-24)

Bonneau further discloses that the Type B smart card communication protocol, uses a Non-Return-to Zero modulation with a subcarrier at 847.5 kHz, hence it would have been obvious to one of ordinary skill to use Non-return to Zero technique to code and decode signals for station-station communication since the NRZ code requires only half the bandwidth required by the Manchester code.

From the teaching of Bonneau it would have been obvious to one having ordinary

skill in the art at the time the invention was made to modify the interrogator of Strong to

include two signal processing means to process the signals received from first protocol

executing means and second protocol executing means as taught by Bonneau in order

to improve the interrogators so they can communicate with devices having different

communication protocols through a single port (see col. 4, lines 37-39 and col. 2, lines

65-67).

Regarding claims 2, 6, 12, 13, 16 and 17, Strong teaches that interrogator 6

generates a 2.4 GHz field (i.e., an energy-supply signal) to power tags 2 over the air

each time the interrogation starts (i.e., the interrogator-tag protocol begins) (see

Sections [0096]-[0097]). Strong also teaches that interrogators 6 communicate with

each other over an Ethernet LAN (see Section [0047]). Though Strong fails to expressly

teach that interrogator 6's second protocol-executing means having a synchronizing

signal generating means generating a synchronizing signal each time the interrogator-

interrogator protocol starts, a message or frame generated by interrogator 6 includes an

eight-byte preamble that enables a receiving interrogator 6 to lock onto the transmitting

interrogator 6's timing on a frame-by-frame basis; thus the preamble functions as a

synchronization signal, and interrogator 6's second protocol-executing means must

have a synchronizing signal generating means. Though not expressly taught, Strong's

interrogator 6 must have an integrated circuit and comprising at least (1) a radio

frequency (RF) transmitter and receiver (or an RF transceiver) and a microprocessor

that form a first protocol-executing means in order to communicate with tags 2 via

spread-spectrum and (2) an Ethernet interface (i.e., a second protocol-executing

means) in order to communicate with other interrogators 6 via the LAN.

Regarding claims 3 and 7, because Ethernet devices only transmit when there is

information to be transferred instead of transmitting continuously, as required by some

network protocols, Strong's interrogators 6 conserve power by transmitting to other

interrogators 6 only when necessary.

Regarding claims 4 and 8, Strong teaches that interrogator 6's first protocol-

executing means handles a interrogator-tag protocol that communicates with a plurality

of tags 2 (see Fig. 2 and Sections [0045] and [0055]-[0056]). In addition, Strong teaches

that a master interrogator 6 sends a "turn on" command to a slave interrogator 6 seven

milliseconds early (i.e., as early as possible) to compensate for a seven-millisecond

delay between the master and slave interrogators 6 (see Section [0055]).

Regarding claims 11 and 15, Strong teaches that the LPS tags are considered

RFID tags (see section [41], lines 19-20).

7.   Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Strong

et al. (US 2003/0007473) in view of Bonneau et al. (6,577,229) and further in view of

Balasubramanian et al. (5,610,947).

As of claim 18, the combination of Strong and Bonneau discloses all the

limitations of the claimed invention as mentioned in claim 1 above but fails to explicitly

disclose a processing means configured to code and decode the signals using the FM

zero code.

Balasubramanian discloses a processor (via a FM/Flash MODEM; see fig. 2 and
3) which modulates and demodulate (encoding and decoding) the data using the FM
zero coding (see fig. 1; also see col. 3, lines 54-60; also see col. 5, lines 30-37).

From the teaching of Balasubramanian it would have been obvious to one having
ordinary skill in the art at the time the invention was made to modify the combination of
Strong and Bonneau to use the FM zero coding as taught by Balasubramanian since
different encoding and decoding techniques such as NRZ, FM zero, FM1, Manchester
are used in communication systems and can be switched with each other based on the
system requirement.

8.   Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Strong
et al. (US 2003/0007473) in view of Bonneau et al. (6,577,229) and further in view of
Kang (US Pub 2002/0024421).

As of claim 20, the combination of Strong and Bonneau discloses a system
wherein multiple interrogators transmit signals to other interrogators and to multiple
transponder using their antennas, but fails to explicitly disclose that the transmitting
means includes a transmission coil to transmit and receive different signals.

Kang disclose a radio frequency system including a reader (communication
station) to which includes and transmission means including a transmission coil (via
antenna coil 160; see fig. 1) to transmit and receive different signals (see paragraph
[0010]).

From the teaching of Kang it would have been obvious to one having ordinary
skill in the art at the time the invention was made to modify the combination of Strong

and Bonneau to include a transmission coil in the transmitting means as taught by Kang

since by adding additional conducting rods or coils and varying their length, spacing,

and orientation, an antenna with specific desired properties can be created.

Response to Arguments

9.   Applicant's arguments filed 10/23/08 have been fully considered but they are not

persuasive.

        Applicant argues that the cited references of Strong and Bonneau do not disclose

"using only Miller code to code signals and using only Manchester code to decode

signal for contact-less station-transponder communication" and using one of a non-

return-to-zero code and an FM zero code to code and decode signal for contact-less

station-station communication." The Examiner respectfully disagrees. Bonneau teaches

that RF circuit 214 and DSP 210's first encoding means process signals according to a

100% Modified Miller modulation scheme when transmitting signals to the Type A smart

card (see col. 12, lines 53-56), which uses a Miller coding system and the first decoding

means process signal according to an ASK- Manchester modulation scheme, which

uses a Manchester coding system (see col. 2, lines 30-33; col. 12, lines 51-67; col. 13,

lines 1-5 and 46-47; and col. 14, lines 1-24), hence using Miller coding to code signal

and Manchester code to decode signals for contact-less station-transponder

communication.

        Bonneau further discloses that the Type B smart card communication protocol,

uses a Non-Return-to Zero modulation with a subcarrier at 847.5 kHz, hence it would

have been obvious to one of ordinary skill to use Non-return to Zero technique to code

and decode signals for station-station communication since the NRZ code requires only half the bandwidth required by the Manchester code.

Further note, since Bonneau discloses different techniques to code and decode signals, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use only Miller code to code signal and use only Manchester to decode based on the system requirement.

Conclusion

10.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to NABIL H. SYED whose telephone number is (571)270-3028. The examiner can normally be reached on M-F 7:30-5:00 alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Zimmerman can be reached on (571)272-3059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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